

PATENT COOPERATION TREATY

PCT/EP2003/002996



Translation

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

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|---|---|--------------------------------|
| Applicant's or agent's file reference I62166PC | FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416) | |
| International application No. PCT/EP2003/002996 | International filing date (day/month/year) 21 March 2003 (21.03.2003) | Priority date (day/month/year) |
| International Patent Classification (IPC) or national classification and IPC B01F 3/08 | | |
| Applicant IFAC GMBH & CO. KG | | |

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 5 sheets, including this cover sheet.
- ☒ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 2 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☒ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

| | |
|--|--|
| Date of submission of the demand 20 October 2004 (20.10.2004) | Date of completion of this report 23 June 2005 (23.06.2005) |
| Name and mailing address of the IPEA/EP | Authorized officer |
| Facsimile No. | Telephone No. |

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/EP2003/002996

I. Basis of the report

1. With regard to the elements of the international application:*

- ☐ the international application as originally filed
- ☒ the description:
 pages 1-26, as originally filed
 pages _____, filed with the demand
 pages _____, filed with the letter of _____
- ☒ the claims:
 pages _____, as originally filed
 pages _____, as amended (together with any statement under Article 19
 pages _____, filed with the demand
 pages 1-10, filed with the letter of 09 June 2005 (09.06.2005)
- ☐ the drawings:
 pages _____, as originally filed
 pages _____, filed with the demand
 pages _____, filed with the letter of _____
- ☐ the sequence listing part of the description:
 pages _____, as originally filed
 pages _____, filed with the demand
 pages _____, filed with the letter of _____

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item. These elements were available or furnished to this Authority in the following language _____ which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/fig _____

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rule 70.16 and 70.17).

** Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

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III. Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

1. The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non obvious), or to be industrially applicable have not been examined in respect of:

☐ the entire international application.

☒ claims Nos. 7,8

because:

☐ the said international application, or the said claims Nos. _____
relate to the following subject matter which does not require an international preliminary examination (*specify*):

See the supplemental sheet

☒ the description, claims or drawings (*indicate particular elements below*) or said claims Nos. 7,8
are so unclear that no meaningful opinion could be formed (*specify*):

☐ the claims, or said claims Nos. _____ are so inadequately supported
by the description that no meaningful opinion could be formed.

☐ no international search report has been established for said claims Nos. _____

2. A meaningful international preliminary examination cannot be carried out due to the failure of the nucleotide and/or amino acid sequence listing to comply with the standard provided for in Annex C of the Administrative Instructions:

☐ the written form has not been furnished or does not comply with the standard.

☐ the computer readable form has not been furnished or does not comply with the standard.

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V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

| | | | |
|-------------------------------|--------|-----------|-----|
| Novelty (N) | Claims | 1-6, 9-10 | YES |
| | Claims | | NO |
| Inventive step (IS) | Claims | 1-6, 9-10 | YES |
| | Claims | | NO |
| Industrial applicability (IA) | Claims | 1-6, 9-10 | YES |
| | Claims | | NO |

2. Citations and explanations

This report makes reference to the following documents:

D1: US-A-5 250 576 (SHIVELEY THOMAS M ET AL)

5 October 1993 (1993-10-05)

D2: US-A-4 539 139 (FUJIWARA KAZUHIKO ET AL)

3 September 1985 (1985-09-03)

D1, which is considered to represent the prior art closest to the subject matter of claim 1, discloses (the references in parentheses are to this document):
a device suitable for continuous production of emulsions or dispersions with the exclusion of air (see title and figure 2), comprising a mixing vessel enclosed from all sides which has feed and discharge tubes for introducing and discharging flowable materials or blends thereof and a stirring device (parts 9 and 10 (feed), 17 (discharge) and 15 (stirring device), said vessel permitting materials to be introduced into the emulsion or dispersion while stirring without generating cavitation forces and without high-pressure homogenization (column 14, lines 13-34; further, this feature is not a structural feature of the device, introduction of materials while stirring without generating cavitation forces being also possible using the device described in D1 if appropriately operated) and

wherein the mixing vessel is substantially cylindrical and the axis of the stirring device lies in the axis of the cylinder.

The subject matter of claim 1 thus differs from the known device in that the feed and discharge tubes are arranged substantially perpendicular to the cylinder axis in the upper and lower circumferential areas of the cylinder at a mutual spacing (see figure 2).

The subject matter of claim 1 is therefore novel (PCT Article 33(2)).

The problem addressed by the present invention may therefore be considered that of proposing a device in which lower cavitation forces are generated.

The solution proposed in claim 1 of the present application involves an inventive step (PCT Article 33(3)). The reasons are:

None of the prior art documents discloses a device in which the feed and discharge tubes are perpendicular to the cylinder axis such that material inputs and outputs flow parallel to the direction of flow of materials in the mixing vessel, thereby generating lower cavitation forces.

Claims 2-5 are dependent on claim 1 and therefore likewise meet the PCT requirements for novelty and independent step.

Independent claim 6 and claims 9-10, which are dependent thereon, pertain to the process derived from operation of the device.

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Claim 7 does not meet the requirements of PCT Article 6 because the subject matter for which protection is sought is not clearly defined. The claim attempts to define the subject matter in terms of the result to be achieved, but in so doing merely states the problem to be solved without indicating the technical features necessary for achieving this result. Claim 8, which is dependent on claim 7, is therefore also unclear.

Contrary to PCT Rule 5.1(a)(ii), the description does not cite D1-D2 or indicate the relevant prior art disclosed therein.